

REMARKS

I. ANTICIPATION REJECTION OVER DELISO ET AL.

In paragraph 3 of the Office action, the Examiner has rejected claims 1-3 as anticipated under 35 U.S.C. § 102(b) by DeLiso et al. (U.S. Patent No. 5,356,852). Applicant respectfully traverses this rejection and requests reconsideration and withdrawal thereof.

Applicant respectfully submits that the DeLiso et al. disclosure does not anticipate Applicant's claims for at least the following reasons.

Applicant's claims are directed to a filtration media for drinking water. In other words, Applicant is claiming a material for removing solids and liquids from another liquid, i.e. liquid phase purification. DeLiso et al. disclose a material for preventing emission of hydrocarbons at a gas pump.¹ In other words, DeLiso et al. disclose a material that absorbs hydrocarbon vapors from air – vapor phase purification.

Applicant's claims are directed a material that is a rigid, porous solid. DeLiso et al. disclose a honeycomb. A honeycomb is not a rigid, porous solid as this term is used in Applicant's claims. A honeycomb is a hollow structure that is primarily open space separated by partitions, not a solid permeated by interconnecting pores. This difference can be seen by a review of the specification, which contains no disclosure of any techniques for forming a honeycomb structure. To the contrary, Applicant's specification describes the preparation of molded blocks. Filter "blocks," as this term

¹ Contrary to the Examiner's assertion, DeLiso et al. does NOT disclose a broad "filtering fluids" use for its honeycombed structure; DeLiso et al. disclose ONLY the absorption of hydrocarbon vapor.

is used in the art, are not honeycombed. By contrast, DeLiso et al. specifically disclose extruding their material into a honeycomb shape – such a shape does not just naturally occur, and certainly will not occur using the processes described in Applicant’s specification.

Moreover, DeLiso et al. is not enabling for a non-honeycombed structure. The honeycomb is necessary for, and dictated by, the radically different use to which DeLiso et al. put their material: flowing air through the large honeycomb allows the air to be processed for hydrocarbon vapor removal without a significant pressure drop that would require pressurizing the air upstream of the absorbent in order to create enough flow through the absorbent. This is not the case when purifying water, the recited use for Applicant’s claimed material, since the filter is installed in water lines that are already pressurized.²

Finally, the Examiner has not pointed to a single embodiment disclosed by DeLiso et al. that contains zirconia (which is only disclosed as one entry in a laundry list of “fillers”), activated carbon particles, and an organic binder binding together the activated carbon particles and zirconia. None of the examples disclose the use of zirconia (or any of the other fillers from the shotgun disclosure at column 5, lines 34-36). While the Examiner will doubtless assert that the disclosure is not limited to its specific examples, there is no other portion of the disclosure that pertains to a specific embodiment where zirconia, activated carbon, and binder are combined together in a

² The Examiner has impermissibly ignored the claim preamble recitation that the filter is for use to purify drinking water; however, this limitation does “breathe life and meaning into the claim” in the sense that a honeycombed structure would be essentially useless for absorbing or filtering impurities from a condensed phase (because the majority of the condensed phase will not come into contact with the walls of the honeycomb, and because diffusion of impurities to the wall will not occur in a sufficiently short time scale to make the material practical).

material that would be suitable for filtering drinking water. At best, the Examiner has asserted that it would have been obvious to pick and choose from among the allegedly equivalent “fillers” disclosed in DeLiso et al., and select zirconia from among them for combination with activated carbon and binder. Requiring selection from among a list of choices is not anticipation; at best, it is obviousness if there is some motivation for the selection of the particular claimed component.

For at least the reasons given above, the Examiner’s anticipation rejection is erroneous and should be withdrawn.

II. OBVIOUSNESS REJECTIONS OVER DELISO ET AL.

In paragraph 4 of the Office action, the Examiner has rejected claims 4-6 as obvious under 35 U.S.C. § 103(a) over DeLiso et al.

In paragraph 5 of the Office action, the Examiner has rejected claims 10-12 as obvious under 35 U.S.C. § 103(a) over DeLiso et al.

Applicant respectfully traverses both of these rejections and requests reconsideration and withdrawal thereof.

Applicant has explained above why DeLiso et al. does not anticipate the invention recited in claims 1-3. In addition, DeLiso et al. does not teach or suggest selecting zirconia from among the numerous items in the laundry list of fillers disclosed by DeLiso et al. More specifically, DeLiso et al. does not teach or suggest that the inclusion of zirconia in the amounts recited in the claims will allow the resulting material to function to purify water by removing heavy metals and organic contaminants from the water, yielding drinkable water. The Examiner has provided no citation of a reference showing that, in general, materials suitable for removing

hydrocarbon vapors from air are also suitable for removing organic contaminants and heavy metals from liquids, and in particular from water. Absent some explicit teaching to this effect, any obviousness rejection of claims 1-3 over DeLiso et al. would necessarily rely on mere speculation and the impermissible use of hindsight.

With respect to claims 4-6, the Examiner seems to essentially assert that mutually contradictory teachings in DeLiso et al. regarding the amounts of zirconia and the amount of activated carbon should be resolved in such a way as to increase the amount of zirconia in the composition. While convenient for the Examiner's hindsight-based rejection of Applicant's claims, such a resolution flies in the face of the explicit teachings of DeLiso et al. DeLiso et al. is concerned with a material that absorbs hydrocarbon vapors from air, as Applicant has explained several time above. The primary absorbent material in the composition is activated carbon. Zirconia is described as a "filler." One of ordinary skill in this art would NOT have been motivated to decrease the amount of the primary absorbent in the composition in favor of more filler, absent some other reason to do so (which the Examiner has failed to supply). Such a modification, which would result in an amount of activated carbon outside the range disclosed in DeLiso et al., would take the composition outside the scope of the disclosure of DeLiso et al., and a worker of ordinary skill in the art would expect that the result would be a composition with inferior performance. In effect, DeLiso et al. teaches away from the modification that the Examiner asserts would have been obvious.

Similar arguments apply to claims 10-12. The Examiner has dismissed the claimed ranges as a "matter of optimization and [is] within ordinary skill." However,

there is no teaching or suggestion in the DeLiso et al. disclosure that one or ordinary skill could or should optimize the ratio of alumina to zirconia in the “filler” portion of their composition. DeLiso et al. does not even suggest that the relative amounts of these two components is a result effective operating parameter. Absent some disclosure in DeLiso et al. that changing the alumina/zirconia ratio gives a difference in result, there can be no motivation to “optimize” it.

Applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness with regard to claims 4-6 or 10-12. Accordingly, these rejections should be withdrawn.

The Commissioner is hereby authorized to charge any deficiencies or credit any overpayment to Deposit Order Account No. 11-0855.

Respectfully submitted,



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